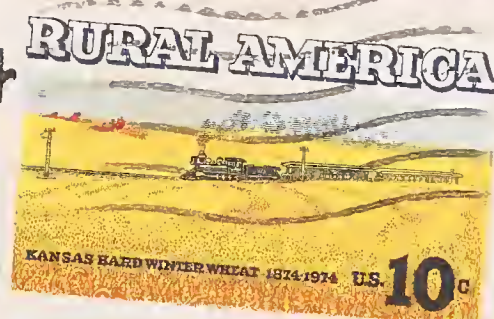




AMERICAN ASSOCIATION OF ZOO

NATIONAL HEADQUARTERS

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THE KEEPER
NATIONAL AAZK BULLETIN

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A.A.Z.K. PROFESSIONAL REGISTRATION PROGRAM

We are very pleased to announce the adoption of a registration program that will afford keeper personnel an opportunity to be recognized for the educational and experience qualifications he or she has achieved. Upon successful application the zoo keeper will be awarded a certificate denoting professional classification, and A.A.Z.K. hopes that the bearers of such certification will be given priority consideration by all employers of animal care personnel.

A special A.A.Z.K. national registration board will administer the procedures necessary for this registration.

The intent and purpose of the program is in keeping with A.A.Z.K. policy to promote a general up-grading of our particular field.

Acceptance of the program by the managements of many zoos, aquaria, and other facilities will be slow, but we can only hope they will realize the value in promoting professionalism at all levels of the zoo world. This program affords a means of attesting to the educational and experience qualifications of men and women employed for compensation in zoo and aquarium service. It is open to qualified personnel in public, quasi-public and privately operated zoological parks, game farms, animal reserves, and other facilities related to the care of wild animals.

We urge all zoo keepers to consider registration under the A.A.Z.K. program. Copies of the complete plan, how it works, and its potential benefits, along with a form requesting applications, will be mailed to all A.A.Z.K. members in the near future.

Applications must be accompanied by the registration fee of \$30.00 U.S. This is a one-time fee, providing life-time registration. The program is voluntary and in no way affects membership in A.A.Z.K.

Again, we hope all zoo keepers will examine the program, consider its value to our profession, and make application for a recognized classification.

Watch for subsequent information in future editions of The Keeper.

REGISTER WITH A.A.Z.K.--
IT'S A GIANT STEP FOR
PERSONAL PROFESSION GROWTH!

All AAZK Memberships include a subscription to The Keeper. Single copies \$1.00. Opinions expressed by individual authors are their own and do not necessarily reflect the policy of the American Association of Zoo Keepers.

The Keeper, the official national publication of the American Association of Zoo Keepers, is published six times annually and distributed throughout the United States, Canada, and several foreign countries.

ANY CLASSIFIED ADVERTISING SHOULD BE SENT TO AAZK NATIONAL HEADQUARTERS. WRITE TO AAZK HQ FOR RATES. Please send any articles or comments on the newsletter to the editorial office: Brian Joseph, Editor, 685 Brightwood Avenue, Chula Vista, CA., 92010, or to AAZK Headquarters.

MR. BELA J. DEMETER, National Zoo, Washington, D.C., will serve as chairman of the A.A.Z.K. Election Committee. This committee shall be responsible for national election procedures prescribed under the A.A.Z.K. By-Laws. Other members of the committee are Al Perry, Thomas Schneider, Brenda Hall, and Eugene Maliniak. Each of the committee members is a long-time zoo keeper, and most qualified to make meaningful decisions in their choice of prospective candidates for A.A.Z.K. elections in accordance with the requirements of the A.A.Z.K. By-Laws and Constitution. Notification of impending elections will be published in The Keeper.

Note from the editor: A.A.Z.K. members are encouraged to submit articles for publication in the newsletter. It will be difficult to maintain The Keeper as a "keeper" publication without such input. Please forward your articles to: 685 Brightwood Avenue, Chula Vista, California, 92010.

ELEPHANT TRAINER Robert "Smokey" Jones recently held four day classes for Los Angeles Zoo Animal Keepers who work with the zoo's four Asian and three African elephants. The classes, which were well received by both staff and keepers, were designed as refresher courses about the care and handling of the animals and to standardize the commands used in handling of the elephants.

SAN DIEGO ZOO AAZK members participated in a question and answer session at three locations in the zoo on Father's Day weekend. Members participating, on their own time, were Jim Cusick, George Muro, Teri Steck, Dick Sweeney and Jim Tillotson. There was a favorable response on the part of the public to this type of activity and few of the questions asked were trivial. During the weekend, over 700 applications for membership were distributed. However, response in this area has been poor. An AAZK information booth at the zoo is now being planned and made possible through the cooperation of the Zoo Staff.

K.C. LINT, Curator of Birds at the San Diego Zoo, recently spent one month in the Philippine Islands as a guest of the International Executive Service Corps. K.C. served to advise the Filipinas Foundation, Inc. and its architects on the location, of the construction, size, facilities and fauna to be exhibited in a proposed aviary and ornamental lake.

FRED J. ZEEHANDELAAR CONVICTION REVERSED--On May 15, 1974, a United States Court of Appeals unconditionally and unanimously reversed Mr. Zeehandelaar's October, 1973, conviction arising from the Endangered Species Act of 1969. The Appellate Court said that his indictment was defective and misleading and that he did not get a fair trial.

PLEASE NOTE--If each member of AAZK sent in one membership, it would help us bring you many additional services. How about it? Surely you have a friend or member of your family that you can enlist!

Send name, address and zip code of new member to AAZK Headquarters today!! Gift memberships will be valid through July of 1975.

AAZK has converted to a new comprehensive bookkeeping system to comply with accredited accounting procedures.

POLAR BEAR CUBS AT THE
HENRY DOORLY ZOO
by Dale Becker, Keeper

Since its beginnings, the main objective of the Henry Doorly Zoo has been the propagation of the many rare and endangered animals in the collection. In the past, repeated successes have been realized with the Bontebok, the Amur Leopard, the Golden Lion Marmoset and the Sumatran Tiger to name a few. This article shall deal with the captive births of two Polar Bear cubs and their subsequent rearing by their mother.

The zoo received two female and two male polar bear cubs, each approximately five months of age, on May 10, 1966. On the following July 1, another female about the same age arrived at the zoo. These five bears shared the same grotto for the next six years until they reached adulthood.

During July of 1970 and again in March of 1971, copulation was observed between the male Olaf and the female Olga. However, no births occurred either year. On January 31, 1972 and again on February 2 of that year, copulation was again observed between these two bears.

In anticipation of a pending birth, Olga was moved into a special cubbing den on October 10. This den consisted of two cylindrical concrete tubes four feet in diameter by nine feet in length placed end to end. One end of this den was covered with a barred door while the other was covered with bars through which a closed circuit television camera was aimed at the den floor. This den had been placed in an unused tunnel located on zoo property. Bedding in the den consisted of an eighteen inch layer of wood shavings.

In an effort to provide as much seclusion as possible, Olga's feed was suspended. Thus, the bedding would stay relatively clean while the bear lived off her fat reserves. In this way, she wouldn't have to be disturbed by a keeper entering the tunnel to clean the den. Water was supplied to her water bowl by a hose from outside the tunnel.

On December 21 the long wait ended. Two cubs were seen on the closed circuit television monitor. Although Olga seemed to be taking good care of the cubs, it was decided to remove them and hand-raise them. When sexed, they were found to be one male and one female. Their weights were 23 and 22 ounces respectively.

We were saddened on December 22 by the death of the male cub. Post-mortem results showed that the cause of death was cerebral edema. The female survived until March 14, 1973. Post-mortem results did not show any definite cause for her death.

Meanwhile, Olga had been moved back to the grotto in hopes that she might breed again. Our hopes were renewed when copulation was observed between she and Olaf several times daily on March 22, 23, and 26.

She was again placed in her cubbing den on December 1 of 1973. The very same attempts to insure seclusion were made as had been before, and on December 21 two new cubs were observed on the monitor. She seemed to be an exceptional mother and it was decided that the cubs would be left with her.

No one entered the tunnel for three weeks, but a daily check was made for them on the monitor. During the next three months the cubs grew tremendously in both size and activity. On April 18, 1974, the family was moved out into

POLAR BEAR CUBS (continued)

a grotto in the bear exhibit. To prevent the two little males from tumbling into the moat, an electric woven wire fence was placed across the grotto about three feet from the edge of the moat. The pool in the grotto was partially filled with concrete slabs to enable the cubs to learn to swim in relatively shallow water. The slabs will be removed as the cubs master the art of swimming.

The family has adjusted very well to the new home and the noisy people that pass by each day. They really seem quite uninterested in anything outside their grotto.

I feel that with the rearing of these cubs by their mother, something very worthwhile has been accomplished. Polar bear cubs are born in captivity regularly but are very seldom raised to maturity either by their mothers or by zoo personnel. The answer seems to be the need of suitable quarters that will provide the needed security and seclusion for the pregnant bear. If these are provided, I see no reason why reproduction and mother-rearing could not occur in most zoos that now keep and exhibit polar bears.

ZOO EDUCATION FOR THE HANDICAPPED by Sue Lackey, Como Zoo

At the national convention in Chicago, one of the keepers from a world-famous zoo was describing his zoo's newest exhibit building, and an embarrassing mistake that had been discovered after the building had been built. Due to an oversight in the design of a flight of stairs, part of the exhibit was inaccessible to handicapped persons in wheel chairs. Even though this particular zoo is impressive as a workable facility from both a zoological and public standpoint, this incident illustrates the fact that an unfortunately large segment of the public--the handicapped--are often overlooked.

We tend to concentrate on the education of the average citizen who has no trouble reaching the zoo, reading a guide book, or taking a zoo tour. These people, after all, are the ones who support our zoos. But zoos as public institutions, and keepers as public servants, must become interested in reaching all segments of the public.

In many cases, educational programs for the handicapped can be easily put together and more rewarding to perform. Docent groups are ideal for this. Until recently, Como Zoo's Docents had no educational aids to bring to handicapped groups. Now, however, animal skins, egg, feather and antler collections, tape recordings, and animal slides are available. The most popular items in this program (the skins, antlers, etc.) can be found free of cost right on the zoo grounds.

Contact areas featuring farm animal babies can often be successfully utilized for certain handicapped groups. Unfortunately, this is often extended to the use of live zoo animals in presentations outside the zoo grounds. In my opinion, this is a mistake. No animal outside of its normal environment is completely predictable or at ease. Put it in a room with children who do not realize the dangers of a live animal, or who cannot control their muscular co-ordination, and injuries (usually to the keeper handling the animal) and bad impressions often result. Even a baby rabbit can inflict a nasty bite

EDUCATION FOR HANDICAPPED (continued)

when grabbed suddenly by a mentally retarded youngster who doesn't realize the power of his grip. These problems do not arise when animal skins are used. The opportunity to feel the difference between an antler in velvet and one without, or the difference between a leopard's paw and our own feet, can be more informative than a brief touch of a frightened animal.

Quite often, local and state organizations for the handicapped have more funds available to them than do zoos. Special aids, normally beyond the reach of the average zoo budget, can often be supplied by these groups. Braille exhibit signs, earphones, tape recordings, braille and talking books, and audio-visual systems are just a few of the things that can be donated and incorporated into existing zoo facilities.

But a zoo's staff can contribute more to these programs than design alone. Working with animals every day, keepers must develop a form of communication that relies on something other than spoken words. Anybody that holds intelligent conversation with rhinos, or regularly converses with birds, has some very unique qualities. This rapport with animals can be transferred over to humans that can't hear, or perhaps can't understand, spoken words. A keeper can also convey very special information to a handicapped person. Who could better explain to a blind person how clumsy a baby camel is when he stands for the first time than the keeper who was there? A keeper can also explain why a particular animal is using a particular expression. Como Zoo happens to have a keeper who does a very impressive vocal imitation of an orangutan in heat. (This doesn't seem to have much public appeal, however.) But the point is, keepers can contribute a great deal to educational programs for the handicapped without neglecting their animal-keeping duties.

During this past year alone, Como Zoo has provided programs for groups ranging from adult blind to a group of children who were deaf, blind and retarded. During several of these sessions, even the gardeners from the neighboring conservatory have volunteered their help by showing examples of plants with unusual texture or fragrance.

In the education of the handicapped about zoos and zoo animals, keepers are probably in a position to contribute more than in any other aspect of public education, yet they seldom do.

I would appreciate hearing from other zoos about their experiences with education for the handicapped. Please address correspondence to Sue Lackey, c/o Como Zoo... Midway Parkway and Kaufman Drive... St. Paul, Minnesota, 55103.

HABITATS FOR SMALL CATS

(This article is being reprinted from "Brookfield Bandarlog" with the permission of the Chicago Zoological Society.)

The majority of living cats, 31 of 36 species, are small when compared with the massive lions, tigers and leopards. Many of these small species are commonly kept by zoos, but they are a challenge to exhibit effectively because they are almost always nocturnal, shy and elusive. The Small Feline House, a new building at Brookfield Zoo, represents a modern approach to the design problems posed by these animals.

SMALL FELINE HOUSE (continued)

The Small Feline House will exhibit a diverse selection of small cats in spacious naturalistic surroundings. The species were selected to show the range of environmental adaptation and behavior within this group of closely related mammals. Each exhibit is sufficiently versatile that a variety of ecologically similar species of cats could serve as alternates. Initially we plan to exhibit the sand cat, Pallas cat, Canada lynx, margay and fishing cat.

The exhibition theme is essentially ecological; we have sought to realistically depict the various environments in which the species live. However, naturalistic exhibits (in and of themselves) do not guarantee either the welfare or natural behavior of the inhabitants. Much more has gone into these exhibits than replication of geological and botanical detail, for the layout of each unit is based on the psychological needs and behavioral traits of the species, as well as the management necessity of minimal disturbance but maximum control.

To achieve these objectives, the natural history and behavioral literature was reviewed and consultations were held with other zoos and cat experts. Rough designs of the exhibits were sketched which encompassed our esthetic goals, as well as the management specifications resulting from research. A series of practical alterations were then made following discussion by a committee of curators and keepers. The design was subsequently presented to the keepers at large for further suggestions. Thus the models on which construction is based emerged from the collective contributions of many Brookfield personnel.

A practical goal in design was to immerse the visitor in the natural habitats of the cats being exhibited—to surround him with the appropriate environment. We want a structure where zoo-goers would feel they had actually spent a few minutes in the early evening gazing across the Sahara Desert, crossing a northern mountain bridge, or walking in a tropical forest.

In accord with this approach, and unlike most buildings, the Small Feline House has no fixed internal structure, except in the small west section beyond the exhibit space. The architects and builders provided a solid shell in which the zoo's artists and craftsmen can erect large-scale exhibits of various shapes and sizes. Two large steel beams beneath the ceiling provide tracks for moving exhibit materials, and the ceiling girders will serve as anchoring points for some of the exhibits' framework. The electrical and water systems are simply designed to provide these utilities at whatever level they may be needed. The ventilation ducts from the air handling units will similarly be extended into the exhibits as required.

The animal space of each exhibit will communicate via an ascending passage with an outdoor cage located on the roof of the building. The purpose of this scheme is to provide an additional exercise area where the cats can experience daylight. Thus at midday, when the Small Feline House opens, the cats will have experienced nearly 8 hours of daylight, and their normal crepuscular activity period will be protracted by an extended twilight inside the house. In the course of the afternoon (the cats' subjective evening), a variety of live and prepared foods will be furnished several times and at various locations to encourage foraging.

The habitat modules will be supplied with subterranean denning areas serviceable from behind the scenes, a number of prey-burrows from which rodents may

intermittently emerge, and area with natural soil substrates to serve as lavatory sites. Keepers will have access to the exhibit from both the visitor and basement levels. In addition, a special camouflaged walkway eleven feet above the public pathway will allow keeper surveillance of the exhibits, as well as provide a vantage point for observation and routine maintenance of the trees and elevated suspended air circulation equipment. Two spiral staircases will connect this keeper walkway with the ground and basement levels behind the scenes. A dumbwaiter at the building's west end will be used to deliver food and materials between different levels.

Our first general consideration in all exhibits was to make the animals and visitors comfortable. We also needed invisible barriers which would allow close proximity to the animals. Further, to promote the feeling of being in the animals' natural habitat, everything had to look as realistic as possible. Lighting methods play a major role in creating the illusion of a natural habitat. Lighting will be used throughout the exhibits to shade and highlight in the same way an artist uses color in painting. Since all of the cats exhibited here are naturally active in the evening hours, soft subtle lighting will be used to create an overall twilight atmosphere. In certain areas, lights will simulate dusk, or accentuate a particular attraction. Special techniques have also been used to give emphasis to the normal coloring of the rockwork. The sources of light will be concealed among the rocks and trees, and the supplementary lighting used to illuminate public walkways will be soft and unobtrusive.

The circulation of air on the varied levels of the exhibits was another problem to be considered. The air conditioning and heating system had to be designed to insure the most agreeable temperatures for both cats and people.

Finally, we had to find materials that would hold up year after year without constant painting and repair work. The main materials traditionally used in zoo exhibits are terrazzo, tile, cement and bars. Although far from ideal, these materials have the important features of being durable and reasonably easy to keep clean. Fortunately, technological advances and the availability of better materials have opened new doors in the design of zoo exhibits.

The material most extensively used throughout the Small Feline project is a new type of epoxy resin mixed to our own specifications. This material, a petroleum product, was chosen for its durability and ease of maintenance. It is totally non-absorbent and is not affected by the acid content in the animals' urine. As with many of our techniques, samples have been tested in existing exhibits for the past year.

Initially, the epoxy mixture had a soft, pliable composition. In this state it is easily molded and shaped. We can add color and other substances, such as sand, to produce special effects. After it hardens, the epoxy has an extremely tough, hard finish which is impervious to weather and hard wear. Since maintenance is such an important consideration, another advantage is its washability. Keepers will be able to wash the exhibits (before visiting hours), and the debris and excess water will be carried away by the open drainage system in the basement. Special maintenance provisions have been included for each of the exhibits. In the sand cat exhibit, for example, two large valves have been installed under the floor of the stage. When necessary, keepers will be able to drain the old sand from the exhibit floor and replace it with fresh material.

The roof of the Small Feline House was specially designed to accomodate a series of connected indoor and outdoor breeding cages to make a total of 20 separate units. The breeding facility will be shielded from disturbance by the precast concrete panels that form the building's walls. Each cage will be connected to a cat-sized shift door, and a shift corridor extending the length of the run will permit us to bypass several cages and their occupants when shifting one cat to a cage several units away. The heavy duty concrete roof will also allow us to provision each cage with a plot of natural substrate--such as sand or humus. At the end of the breeding run and adjacent to an observation room will be a large encounter cage in which introductions between unfamiliar animals will be staged. The often intense social interaction that ensues during these introductions will be recorded or filmed unobtrusively from the observation room.

The kitchen is located on the first floor directly beneath the observation room. Here the keepers have quick access to any part of the building. Beneath the kitchen at ground level is the entrance defile to the Old World Desert exhibit and behind that the loading platform for deliveries.

The naturalistic exhibit has been a favored goal of zoos for a very long time, and many outdoor exhibits at Brookfield and elsewhere provide acceptable facsimilies of places where the animals might be found. Extending this approach to large-scale indoor exhibits and setting a new goal of maximum involvement on the part of the visitor is an evolutionary advance in zoo design. Seeing the animals while within a simulated environmental setting gives visitors a sense of participation which can never be matched by just "looking in." The visitor is involved by actually being able to observe and step into the animals' surroundings, to feel the texture of a rock shelf or the bark of a tree, to step on sand or jagged rock, or to have to trek up an uneven path. This approach is the basis of these exhibits.

Besides being evolutionary in design, the Small Feline House, and exhibits like it, are the training grounds for a new generation of zookeepers. The keepers must understand the complexities of the total exhibit, and be aware of the effects taking place between the animals and their surroundings. The animals will display natural behavior patterns that are often not well expressed in cage confinement. And we hope the visitors will come to a new appreciation of the life of these marvelous creatures.

To sum up, the Small Feline House will be a test of the effects on the visitors of immersion in special environments. It will also allow us to perfect techniques for building indoor exhibits in a relatively unencumbered space (unlike our Australia House, where the new exhibits were bound by existing low ceilings and columns). Our artists and artisans will thus have very practical experience behind them when they tackle the even larger exhibits in the Tropic World of Apes and Monkeys. We expect that new knowledge of cat behavior will be gained from study of animals in the naturalistic settings. We also anticipate adding substantially to existing data on the reproductive biology of the small cats. Such knowledge is basic to long-range conservation programs for any species.

From the editor: Our apologies for the tardiness of this issue of your newsletter. This was caused by a shortage of necessary funds for its publication. Early payment of dues will help prevent future financial hold-ups. Take part in the AAZK "early bird" program!!

LOWLAND GORILLA BIRTH

AT OKLAHOMA CITY ZOO

by Jim Ellis, Animal Technician--Primates

On June 5, 1974, the Oklahoma City Zoo recorded the birth of a baby lowland gorilla to our ten year old female, Kathryn. The unobserved birth occurred prior to 7:30 A.M., after a gestation period of approximately 265 days. The baby was first seen at 7:30 A.M. in Kathy's arms, being held very securely to her belly in a carrying position and later in a nursing position on her breast. The baby was clean and dry but still had the umbilical attached and looped over its left shoulder and down its back, the placenta dragging along the floor. Kathy seemed unsure about the placenta and poked at it several times, finally removing it along with the cord 12 $\frac{1}{2}$ hours later.

Seven hours after birth, the baby was observed to pass fluids from its anal area with the first feces noted on June 8, three days after birth. Nursing was observed to begin 7 $\frac{1}{2}$ hours after birth with lactation first officially noted on June 6, 33 hours after birth, when Kathy was observed pulling at her nipple licking the milk from it. Her breasts were first noted filling on May 18, 18 days prior to the birth. Average nursing time for days 1 thru 5 was 8 minutes per day with an increase to an average of twenty four minutes per day thru day 20 and leveling to an average of 20 minutes per day thru day thirty. This data is based on 238 observed daytime nursings of which 152 were on the left breast and 86 on the right breast. Daytime nursing has shown a gradual decline since day 20 with indications that Kathy has either shifted nursing to evenings and nights and/or that the baby is getting more or richer milk per nursing. On June 30, milk was seen in the baby's mouth which was of a much thicker consistency than that noted on June 6. All of the data for the first thirty days is based on approximately 300 hours of observation with daily observations now being made on the average of 6 to 8 hours per day.

The baby has vocalized strongly since birth with a gradual decline in frequency of vocalizations throughout the first few weeks as nursing increased. Vocalizations have ranged from crying and squeaking to high and low screams. On all occasions in which the baby vocalized, Kathy has reacted by cuddling and closely inspecting the baby. Vocalizing to date has been very sporadic, perhaps one to two times a day or less.

Since birth, a four foot high barrier was in place closing either all or part of our great ape exhibit area from public view. Kathy's cage area could be viewed with difficulty from one of the barriers approximately 18 feet away. Kathy showed definite stress and signs of wanting seclusion from public view throughout the first 44 days. Kathy did however show a great deal of rapport for her three keepers and two observers allowing us to observe and examine the baby up close after her initial nervousness wore off. Barrier reductions were attempted on June 8, 9, 16 and 26 with no success. On July 18, the barriers were reduced to within four feet of the window of Kathy's cage area with Kathy showing no signs of stress since. She seems at times to be showing her baby off now.

The baby has shown a rapid increase in strength since June 14 and has continued to the stage of creeping-crawling as of July 25. Kathy's confidence throughout this period has noticeably increased with her testing the baby's strength as she walks and plays with it. On July 1, Kathy began placing the baby on the floor for seconds at a time yet still maintaining full contact

BABY GORILLA (continued)

with it. On July 5, the baby was observed to roll over onto its stomach on its own and has since done so several times, all still with limited or full contact with Kathy. On July 11, Kathy first placed the baby on the floor without contact but within inches of herself. During this time, any signs of motion would usually cause Kathy to pick the baby up or pull it back to her side. The baby began creeping a few inches on July 15 and crawling on the 25th. On the 26th of July, Kathy began sporadically walking away from the baby for seconds at a time. Also on this day, teething signs were first noted with erupted teeth (upper incisors) seen on the 28th.

Kathy's present quarters measure 16 ft. (front) by 12 ft. (side) by 11½ ft. (back) by 12 ft. (high) with a loft 6 ft. off the floor at the rear of the cage. The loft measures 4½ ft. (wide) by 5 ft. (long) by 6 ft. (high) with a 2½ ft. by 3½ ft. entry from the side with direct view from the public area blocked. Keeper access to the loft is thru the rear service area. There is a steel cable attached to the front bars approximately 8 ft. up which crosses the cage, front to rear, and is attached by the loft entry way. Since the birth, Kathy has been provided with 4-5 burlap bags, which are changed regularly, with which she plays and makes a rudimentary nest in the loft area. No padding was added to the cage other than the above bags as Kathy showed extremely good control of herself and the baby whenever she moved up to and across the cage to the loft. Kathy has continuously carried the baby holding it tightly to herself and maintained extremely good balance throughout this period. Lately Kathy has gone to holding the baby in her cupped hand with the baby's arms wrapped around her forearm and has since become more agile at moving about her cage (especially climbing). Kathy's diet during the first few days by her choice consisted mainly of fruits which we increased in quantity during the first 2 weeks. Kathy's liquid intake was also increased from her normal 28 oz. of milk formula a day by adding juices as often as she would take them, which during the first several days was almost hourly. Kathy's diet has now been returned to normal. No extra supplement is being given to the baby as it appears to be doing well on its mother's milk. Kathy is being given one ounce of liquid Mol-Iron daily along with her normal amount of a general vitamin supplement.

Our future plans call for the re-introduction of Kathy and the baby to our other two female lowlands, Boma and Fern. The zoo's present plans are for the construction of an 8-10 acre outdoor enclosure in our New Africana Zoogeographic area. We are eventually looking forward to maintaining a family group in this new area. At present, there are no plans for the introduction of our male lowland, Moemba, to the female group partly because of the inadequate indoor facilities and partly due to his and the female active interactions which would occur in the present three cages available. See picture on last page of newsletter.

NOTE: Copies of our partial 1974 financial statement are available to any member on request. Please enclose twenty-five cents for handling.

KEEP ABREAST OF THE NEWS!! Please let us have your current address at all times, so you can enjoy uninterrupted newsletter service. Thank you.

ZOO REVIEW by Pat Stout	Two excellent books on the care of Monotremes and Marsupials in captivity.
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Monotremes and Marsupials: A Reference for Zoological Institutions, by Larry R. Collins, 1973 softbound, 323 pps., \$4.20, available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. A comprehensive reference for the care, maintenance, and display of captive monotremes and marsupials. The discussion of each family, giving the outstanding anatomical and behavioral characteristics, is followed by a thorough coverage of each genus within the family, including: Common Names, Species Distribution, History in Captivity, Reproductive Biology, Development of the Young, Recorded Parasite Genera, Torpidity, Enclosure Specifications, Dietary Information, and Additional References.

International Zoo Yearbook, vol. 11, 1971 hardbound, 352 pps., \$20.30, available from Publications Department (IZY), The Zoological Society of London, Regent's Park, London NW1 4RY, England. The Special Feature of this edition is devoted to a symposium on marsupials in captivity, containing a number of very useful articles on the care of marsupials.

Kathy and her baby. Photo by Jim Ellis, Oklahoma City Zoo.

